

CAP AIRCRAFT OPERATING **CHECKLIST**

CESSNA 172

NOTE

This checklist has been developed specifically for the National Flight Encampment. It is designed for use with all models of the Cessna 172/T-41 aircraft. While operations in all these aircraft are similar, there are some significant differences between each model. It is intended that this checklist be completed by the student and flight instructor, with reference to the Pilot's Operating Handbook of the specific aircraft that they will be flying.

This checklist is only a quick-reference list of items that must be completed for each phase of flight. For more detailed information on operating the aircraft and its systems, refer to the aircraft's Pilots Operating Handbook.

NORMAL PROCEDURES

AIRSPEEDS FOR NORMAL OPERATION

Takeoff, Flaps Up:

Normal Climb	_____	CIAS
Short Field Takeoff, Flaps 10°, @ 50'	_____	CIAS

Enroute Climb, Flaps Up:

Normal @ Sea Level	_____	CIAS
Normal @ 10,000' MSL	_____	CIAS
Best Rate of Climb (V_y) @ Sea Level	_____	CIAS
Best Rate of Climb (V_y) @ 10,000' MSL	_____	CIAS
Best Angle of Climb (V_x) @ Sea Level	_____	CIAS
Best Angle of Climb (V_x) @ 10,000' MSL	_____	CIAS

Landing Approach:

Normal Approach, Flaps Up	_____	CIAS
Normal Approach, Full Flaps	_____	CIAS
Short/Soft Field Approach, Full Flaps	_____	CIAS

Balked Landing:

Maximum Power, Flaps 20°	_____	CIAS
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Maneuvering Speed (V_A):

2400 Lbs.	_____	CIAS
2000 Lbs.	_____	CIAS
1600 Lbs.	_____	CIAS

Maximum Demonstrated Crosswind Velocity:

Takeoff and Landing	_____	Knots
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PREFLIGHT INSPECTION

CABIN

1. Required Documents	IN AIRCRAFT
a. Airworthiness Certificate	
b. Registration	
c. Operating Limitations (Placards, Instrument Markings, Pilot's Operating Handbook)	
d. Weight and Balance Data	
2. Parking Brake	SET
3. Fire Extinguisher	CHARGED
4. Hobbs and Tachometer	RECORDED
5. Control Wheel Lock	REMOVE
6. Ignition Switch	OFF
7. Avionics Power Switch	OFF
8. Master Switch	ON

WARNING

When turning on the master switch, using an external power source, or pulling the propeller through by hand, treat the propeller as if the ignition switch were on. Do not stand, nor allow anyone else to stand, within the arc of the propeller, since a loose or broken wire, or a component malfunction could cause the propeller to rotate.

9. Flaps	10°
10. Avionics Power Switch	ON
11. Avionics Cooling Fan	CHECK (AUDIBLY)
12. Avionics Power Switch	OFF

13. Low-Vacuum Light	ON
14. Fuel Quantity Indicators	CHECK
15. Pitot Heat (Before IFR Flight)	CHECK
16. Exterior Lights (Before Night Flight)	CHECK
17. Master Switch	OFF
18. Fuel Selector Valve	BOTH
19. Static Pressure Alternate Source Valve	OFF
20. Baggage Door	LOCKED

EXTERIOR

EMPENNAGE	
1. Rudder Gust Lock	REMOVE
2. Tail Tie Down	DISCONNECT
3. Tail Control Surfaces	CHECK
RIGHT WING TRAILING EDGE	
1. Flap	CHECK
2. Aileron	CHECK
RIGHT WING	
1. Wing Tie Down	DISCONNECT
2. Main Wheel, Tire and Brake	CHECK
3. Fuel Sump	DRAIN
4. Fuel Quantity	VISUALLY CHECK
5. Fuel Filler Cap	SECURED
NOSE	
1. Engine Oil Quantity	CHECK
(See Pilot's Operating Handbook for minimum oil quantities.)	
2. Oil Filler Cap	SECURE

3. Fuel Strainer	DRAIN
4. Oil Access Door	CLOSED
5. Fuel Selector Drain	DRAIN
6. Propeller and Spinner	CHECK
7. Engine Cooling Air Inlets	CLEAR
8. Carburetor Air Filter	CHECK
9. Nose Wheel, Tire and Strut	CHECK
10. Nose Tie Down	DISCONNECT
11. Static Source Opening	CHECK
LEFT WING	
1. Fuel Quantity	VISUALLY CHECK
2. Fuel Filler Cap	SECURED
3. Pitot Tube Cover	REMOVED
4. Fuel Tank Vent Opening	CHECK
5. Stall Warning Opening	CHECK
6. Wing Tie Down	DISCONNECT
7. Main Wheel Tire	CHECK
8. Fuel Sump	DRAIN
LEFT WING TRAILING EDGE	
1. Aileron	CHECK
2. Flap	CHECK

BEFORE STARTING ENGINE

1. Preflight Inspection	COMPLETE
2. Passenger/ Egress Briefing	COMPLETE
3. Seats, Belts, Harnesses	ADJUST & LOCK
4. Fuel Selector Valve	BOTH
5. Avionics Power Switch	OFF

CAUTION

Avionics power must be off to prevent damage during engine start.

6. Electrical Switches	OFF
7. Circuit Breakers	IN
8. Brakes	TEST & SET

STARTING ENGINE

1. Fuel Selector Valve	BOTH
2. Mixture	RICH
3. Carburetor Heat	COLD
4. Throttle	OPEN $\frac{1}{4}$ - $\frac{1}{2}$ INCH
5. Prime	AS REQUIRED
6. Master Switch	ON
7. Propeller Area	CLEAR
8. Ignition Switch	START

NOTE

If engine has been over primed, start with throttle $\frac{1}{4}$ to $\frac{1}{2}$ open. Reduce throttle to idle when engine starts.

9. Oil Pressure	CHECK
10. Starter	DISENGAGED

11. Flashing Beacon	ON
12. Avionics	ON
13. Radios	ON
14. Flaps	UP
15. Transponder	STANDBY

TAXIING

1. Brakes	CHECK
2. Gyro Instruments and Compass	CHECK

BEFORE TAKEOFF

1. Parking Brake	SET
2. Doors and Windows	CLOSED & LOCKED
3. Seat, Seat Belts and Harnesses	SECURE
4. Flight Controls	FREE & CORRECT
5. Flight Instruments	SET

NOTE

The directional indicator should be rechecked during engine run up to avoid compass deviation errors which may occur below 1200 RPM.

6. Fuel Selector Valve	BOTH
7. Mixture	RICH
8. Elevator/Rudder Trim	TAKEOFF
9. Throttle	1700 RPM
a. Magnetos	CHECK
(See Pilot's Operating Handbook for maximum RPM drop and difference.)	
b. Carburetor Heat	CHECK
c. Engine Instruments	CHECK
d. Ammeter	CHECK
e. Suction Gage	CHECK

10. Throttle	800-1000 RPM
11. Throttle Friction Lock	ADJUST
12. Elevator Trim	SET
13. Radios	SET
14. Crew Briefing	COMPLETE
15. Strobe Lights	ON
16. Transponder	ON (ALT) AND SET
17. Landing or Taxi Light	ON IF DESIRED
18. Parking Brake	RELEASE

TAKEOFF

<u>NORMAL TAKEOFF</u>	
1. Wing Flaps	0° to 10°
2. Carburetor Heat	COLD
3. Throttle	FULL OPEN
4. Elevator Control	ROTATE AT _____ KIAS
5. Climb Speed	_____ KIAS
6. Flaps	UP

<u>SHORT FIELD TAKEOFF</u>	
1. Wing Flaps	10°
2. Carburetor Heat	COLD
3. Brakes	APPLY
4. Throttle	FULL OPEN
5. Mixture	FULL RICH
(Above 3000', LEAN to obtain maximum RPM)	
6. Brakes	RELEASE
7. Elevator Control	SLIGHTLY TAIL LOW
8. Climb Speed	V _x _____
(V _x until obstacles are cleared, then V _y)	

9. Flaps	UP (AFTER >V _x + 5 Kts.
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CLIMB

<u>ENROUTE CLIMB</u>	
1. Airspeed	_____ KIAS
2. Throttle	FULL OPEN
3. Mixture	RICH
(Above 3000', LEAN to obtain maximum RPM)	
<u>MAXIMUM PERFORMANCE CLIMB</u>	
1. Airspeed	V _y _____
2. Throttle	FULL OPEN
3. Mixture	RICH
(Above 3000', LEAN to obtain maximum RPM)	

CRUISE

1. Power	2100-2700 RPM
(No more than 75% power is recommended)	
2. Elevator Trim	ADJUST
3. Mixture	LEAN

DESCENT

1. Fuel Selector Valve	BOTH
2. Mixture	ENRICHEN
3. Power	AS DESIRED
4. Carburetor Heat	AS REQUIRED

BEFORE LANDING

1. Crew Briefing	COMPLETE
2. Seats, Seat Belts, Harnesses	SECURE
3. Fuel Selector Valve	BOTH
4. Mixture	RICH
5. Carburetor Heat	ON

LANDING

NORMAL LANDING	
1. Airspeed	_____ KIAS (FLAPS UP)
2. Flaps	AS DESIRED ($<V_{FE}$)
3. Airspeed	_____ KIAS (FLAPS DOWN)
4. Trim	ADJUST
5. Touchdown	MAIN GEAR FIRST
6. Landing Roll	LOWER NOSE GENTLY
7. Braking	MINIMUM REQUIRED
SHORT FIELD LANDING	
1. Airspeed	_____ KIAS (FLAPS UP)
2. Wing Flaps	FULL ($<V_{FE}$)
3. Airspeed	$1.3 \times V_s$ _____
4. Trim	ADJUST
5. Power	REDUCE

	(AFTER OBSTACLE CLEARED)
6. Touchdown	MAIN GEAR FIRST
7. Brakes	APPLY HEAVILY
8. Flaps	RETRACT (FOR MAXIMUM BRAKING)

GO-AROUND/ BALKED LANDING

1. Throttle	FULL OPEN
2. Carburetor Heat	COLD
3. Flaps	SET TO 20°
4. Climb Speed	V _x _____
5. Flaps	RETRACT (>V _x +5)

AFTER LANDING

1. Flaps	UP
2. Carburetor Heat	COLD
3. Strobe Lights	OFF
4. Transponder	STANDBY

ENGINE SHUTDOWN & SECURING AIRPLANE

1. Parking Brake	SET
2. Throttle	800-1000 RPM
3. Magneto Grounding	CHECK
4. Check 121.5	CHECKED
5. Avionics Power Switch	OFF
6. Electrical Switches (except beacon)	OFF
7. Mixture	IDLE CUTOFF
8. Ignition Switch	OFF
9. Master Switch	OFF
10. Control Lock	INSTALL

11. Fuel Selector Valve	RIGHT TANK
12. Flight Plan	CLOSED

EMERGENCY PROCEDURES

AIRSPEEDS FOR EMERGENCY OPERATION

Engine Failure After Takeoff:		
Wing Flaps Up		CIAS
Wing Flaps Down		CIAS
Maneuvering Speed (V_A):		
_____ Lbs.		CIAS
_____ Lbs.		CIAS
_____ Lbs.		CIAS
Best Glide Speed		CIAS
Precautionary Landing w/Power		CIAS
Landing Without Engine Power:		
Wing Flaps Up		CIAS
Wing Flaps Down		CIAS

EMERGENCY ENGINE SHUTDOWN

1. Mixture	IDLE CUTOFF
2. Fuel Selector Valve	OFF
3. Ignition Switch	OFF
4. Master Switch	OFF
5. Parking Brake	SET

EMERGENCY EGRESS

1. Headset	REMOVE
2. Seat Belts and Harnesses	UNFASTEN
3. Rear Seat Occupants	EXIT NEAREST DOOR
4. Front Right Seat Occupant	EXIT RIGHT DOOR
5. Pilot (Left Seat)	EXIT RIGHT DOOR

WARNING

While abandoning the aircraft, use caution for other aircraft, spinning propellers, and any other obstructions.

ENGINE FAILURES

<u>ENGINE FAILURE DURING TAKEOFF ROLL</u>	
1. Throttle	IDLE
2. Brakes	APPLY
3. Wing Flaps	RETRACT
4. Mixture	IDLE CUTOFF
5. Ignition Switch	OFF
6. Master Switch	OFF
<u>ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF</u>	
1. Airspeed	BEST GLIDE

_____	(KIAS FLAPS UP)
_____	(KIAS FLAPS DOWN)
2. Mixture	IDLE CUTOFF
3. Fuel Selector Valve	OFF
4. Ignition Switch	OFF
5. Wing Flaps	AS REQUIRED
6. Master Switch	OFF

<u>ENGINE FAILURE DURING FLIGHT (RESTART PROCEDURE)</u>	
1. Airspeed	BEST GLIDE
	(_____ KIAS)
2. Carburetor Heat	ON
3. Fuel Selector Valve	BOTH
4. Mixture	RICH
5. Ignition Switch	BOTH (OR START)
6. Primer	IN & LOCKED

FORCED LANDINGS

<u>EMERGENCY LANDING WITHOUT ENGINE POWER</u>	
1. Airspeed	BEST GLIDE
	_____ (KIAS FLAPS UP)
	_____ (KIAS FLAPS DOWN)
2. Mixture	IDLE CUTOFF
3. Fuel Selector Valve	OFF
4. Ignition Switch	OFF
5. Wing Flaps	AS REQUIRED
6. Master Switch	OFF
7. Seats, Belts, Harnesses	SECURE

8. Doors	UNLATCHED
9. Touchdown	SLIGHTLY TAIL LOW
10. Brakes	APPLY HEAVILY

<u>PRECAUTIONARY LANDING WITH POWER</u>	
1. Seats, Belts, Harnesses	SECURE
2. Airspeed	BEST GLIDE + 5 KTS.
3. Wing Flaps	20°
4. Selected Field	FLY OVER

<u>NOTE</u>
While flying over the selected field, take note of terrain and obstructions, then retract flaps upon reaching a safe altitude and airspeed.

5. Electrical Switches	OFF
6. Wing Flaps	FULL (ON FINAL)
7. Airspeed	_____ KIAS
8. Master Switch	OFF
9. Doors	UNLATCHED
10. Touchdown	SLIGHTLY TAIL LOW
11. Ignition Switch	OFF
12. Brakes	APPLY HEAVILY
<u>DITCHING</u>	
1. Radio	TRANSMIT MAYDAY

2. Transponder	7700
3. Heavy Objects	SECURE OR JETTISON
4. Approach:	
High Winds, Heavy Seas	INTO THE WIND
Light Winds, Heavy Swells	PARALLEL TO SWELLS
5. Flaps	20° TO FULL
6. Power	300 FPM DESCENT AT BEST GLIDE – 10 KTS.

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NOTE

If no power is available, approach at Best Glide speed with flaps up or at Best Glide minus 5 Kts. With 10° flaps.
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7. Cabin Door	UNLATCH
8. Touchdown	LEVEL ATTITUDE
9. Face	CUSHION/PROTECT
10. Airplane	EVACUATE
11. Life Vests and Raft	INFLATE

FIRES

<u>DURING START ON GROUND</u>	
1. Cranking	CONTINUE
IF ENGINE STARTS	
2. Power	1700 RPM FOR A FEW MINUTES
3. Engine	SHUTDOWN
4. Fire Damage	INSPECT
IF ENGINE FAILS TO START	
5. Throttle	FULL OPEN
6. Mixture	IDLE CUTOFF
7. Cranking	CONTINUE
8. Fire Extinguisher	OBTAIN
9. Engine	SECURE
a. Master Switch	OFF
b. Ignition Switch	OFF
c. Fuel Selector Valve	OFF
10. Fire	EXTINGUISH
11. Fire Damage	INSPECT

<u>ENGINE FIRE IN FLIGHT</u>	
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1. Mixture	IDLE CUTOFF
2. Fuel Selector Valve	OFF
3. Master Switch	OFF
4. Cabin Heat and Air	OFF
5. Airspeed	100 KIAS OR MORE
6. Forced Landing (w/o Power)	EXECUTE
<u>ELECTRICAL FIRE IN FLIGHT</u>	
1. Master Switch	OFF
2. Avionics Power Switch	OFF
3. All Other Switches	OFF
4. Vents/Cabin Air	CLOSED
5. Fire Extinguisher	ACTIVATE

WARNING

After discharging a fire extinguisher within a closed cabin, ventilate the cabin.

If fire appears out and electrical power is necessary for flight:

6. Master Switch	ON
7. Circuit Breakers	CHECK (DO NOT RESET)
8. Radios	OFF
9. Avionics Power	ON
10. Radios	ON (ONE AT A TIME)
11. Vents/Cabin Air	OPEN
<u>CABIN FIRE</u>	
1. Master Switch	OFF
2. Vents/Air/Heat	OFF
3. Fire Extinguisher	USE (IF NEEDED)

WARNING

After discharging a fire extinguisher within a closed cabin, ventilate the cabin.

4. Land	AS SOON AS POSSIBLE
<u>SMOKE AND FUME ELIMINATION</u>	

WARNING

Ensure that fire is completely out before attempting to vent smoke from the cabin.

1. Cabin Heat and Cabin Air	BOTH OFF
2. Air Vents	OPEN
3. Windows	OPEN
<u>WING FIRE</u>	
1. Pitot Heat Switch	OFF
2. Navigation Light Switch	OFF
3. Strobe Light Switch	OFF

NOTE

Perform a side slip to keep the flames away from the fuel tank and cabin, and land as soon as possible using flaps only as required for final approach and touchdown.

ICING

<u>INADVERTENT ICING ENCOUNTER</u>	
1. Pitot Heat	ON
2. Cabin Heat	FULL ON
3. Defroster Outlets	OPEN
4. Throttle	OPEN TO INCREASE PROP SPEED
5. Turn back or change altitude to obtain an outside air temperature that is less conducive to icing.	
6. Watch for signs of carburetor air filter icing and apply carburetor heat as required. An unexplained loss in engine speed could be the caused by carburetor ice or air intake filter ice. Lean the mixture for maximum RPM if carburetor heat is used continuously.	
7. Plan a landing at the nearest airport. With an extremely rapid ice build-up, select a suitable "off-airport" landing site.	
8. With an ice accumulation of 1/4 inch or more on the wing leading edges, be prepared for significantly higher stall speed.	
9. Leave wing flaps retracted. With a severe ice build-up on the horizontal tail, the change in wing wake airflow direction caused by wing flap extension could result in a loss of elevator effectiveness.	
10. Open left window and, if practical, scrape ice from a portion of the windshield for visibility while landing.	
11. Perform a landing approach using a	

forward slip, if necessary, for improved visibility.	
12. Approach 5 to 10 knots faster, depending upon the amount of ice accumulation.	
13. Perform a landing in level attitude.	

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<u>STATIC SOURCE BLOCKAGE</u>	
1. Alternate Static Source Valve	PULL ON
2. Airspeed	CONSULT TABLE (POH, Section 5)

LANDING WITH FLAT MAIN TIRE

1. Approach	NORMAL
2. Touchdown	GOOD TIRE FIRST
3. Rollout	HOLD FLAT TIRE OFF AS LONG AS POSSIBLE

NOTE

If possible, in crosswind conditions, land with the flat tire on the downwind side.

ELECTRICAL POWER MALFUNCTIONS

<u>EXCESSIVE RATE OF CHARGE</u>	
1. Alternator	OFF
2. Alternator Circuit Breaker	PULL
3. Nonessential Equipment	OFF
4. Flight	TERMINATE AS SOON AS PRACTICAL

<u>TOTAL LOSS OF OIL PRESSURE</u>	
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NOTE

If a total loss of oil pressure is accompanied by a rise in oil temperature, there is good reason to suspect an engine failure is imminent.

1. Engine Power	REDUCE
2. Landing Use minimum power required to reach designated touchdown spot.	SELECT SUITABLE LANDING SITE